Our school’s initial focus, at the commencement of the National Partnership Project (Mathematics), was place value but the use, variety and importance of mathematical language also highlighted itself. Despite a combined teaching experience equalling 110 years, we were also starkly reminded of the students’ apparent lack of mathematical language.

Initially, recorded observations were made in our two grades using a task that was guaranteed to draw out conversation. It had a two-way component. Not only was it a less threatening environment, allowing the students to relax, but it also allowed us, the teachers, to zoom in on their particular conversation content. It not only lead us to having a higher expectation of answers and questions of the students, but of all our teachers as well. A Mathematical dictionary became a point of reference to explain terminology. We wanted the students to have that initial knowledge right from the beginning of the concept under study so that everyone was using the same language and that the students also became more familiar with the language itself. With this clearer understanding, there was an expectation that the students’ questioning became more specific in content. This also meant that the conversations teachers had with their students held mathematical language as well. To this end, at fortnightly Professional Learning Team meetings (PLT’s), our colleagues were also supported and encouraged to maintain the same mathematical language across the school. There was an emphasis on a more heightened awareness of the importance of getting the terminology right.

Time devoted to Mathematics within our classrooms, was increased and given equal prominence to English which allowed the mathematical language development to be carried out in a more comfortable fashion.

In addition, we also looked at classroom practice with regard to waiting time. Teachers became more acutely aware of the importance of waiting time; holding back so that students:

- had the time to figure out what was being asked of them
- had time to work out how to find the answer
- had opportunity to choose own method for their working out and calculating.

PLT’s
The biggest impact our school has registered is in the direction of our PLT’s. Originally they were a sharing session, where the content of the Numeracy Project Days was presented and where teachers also had the opportunity to share their own individual resources. It was directed from a single source. However, as the regular sessions progressed, there became an obvious shift. The teachers were more prepared to talk about their own teaching rather than just wanting ideas. Their particular strategies, on certain concepts, were shared between us without any coercion. The atmosphere became one of an active collegial unit rather than a group of passive individuals. The teachers had fun, and their demeanour was one of active engagement.
In addition, other discussions took place that made us, as a staff, look more closely and more directly into our pedagogical practices. Teachers were encouraged to learn together and to articulate their issues, and conversations between teachers centred on concepts and what teaching practices had, or could have been, more successful. Teachers were prepared to offer more to their colleagues, and they were more engaged in the PLT sessions.

- We became more specific about the problems we needed to address and we revisited our focuses.
- We looked at our questioning
  - When did you get to the “jelly” stage?
  - When did your understanding become less?
- We looked more closely at what conditions we needed to set up in our classrooms that would enable the children to better address their struggles; that would help them remember and that would help them explain their thinking.
- We looked at the supports we needed to put into place to improve our mathematics across the school.

A third focus was on our reflective practice. We had to look at how to change the teacher’s thinking about Mathematics and the children’s feedback.

- How could we make our reflection a more valuable learning time?
- What type of questions should we be asking?
- How would we scaffold the steps for our students?
- How would we incorporate reflection time to support our children’s understanding? Eg Find a partner with whom to share your strategy.

An action plan was made to look at what supports and scaffolds we could put in to assist in better and more effective reflection. This is currently an ongoing process.

One particular individual avenue that has been explored was that of partner work with a major goal being set that, by the end of the year, each child would have worked with a different student. Our indicators of success were going to be that they were engaged, that they kept on task and that they actually talked to each other while in the pairs. One task was that they videoed themselves talking about their explanations to a mathematical problem.
There has been an increased focus on oral language across the school. The evidence of that language improvement is that the students are being more vocal and that they are using more specific language in their own questioning and their comments. The climate within our school is changing as the students are keener to start the task and are more prepared to change their own practices. The environment is now one of where results are challenged but in a non-threatening way and the quieter, less-responsive students are now more willing to share their thinking.

Value of Partnership Involvement
The experience of our involvement in the National partnerships Program has been re-assuring but at the same time, it has been a reminder that we must give our students as many opportunities to enhance their skills to help them make mathematics a more natural process in their lives; just as the activities in language are used in their classrooms so should the same ideals be for the mathematics.

At the beginning of this involvement process teachers could relay the responses from their students when they found difficulties with new concepts. The “I don’t get it response!” The evidence is there now that the students are being more vocal and using more specific language in their questioning and their comments. If there is dissension towards a particular student’s method or logic, comments and reasoning are discussed in a constructive climate and the class as a whole makes a contribution.

Giving selected staff the opportunity to be exposed to guest presenters and a variety of content, at a level not normally accessed by schools, has given our school specific direction, support and the opportunity to continue to evaluate and improve upon our current practices. Discussion has centred on the timing and frequency of school data collection and what practices will continue to make our students confident mathematicians.

Future Direction
Our plan is for our PLT’s to continue to become more focused on what is happening in our classrooms. We also plan to zero in on our school’s data collection and the frequency of its analysis. We wish to devise a whole school plan about what data will be collected and when, and how we can address what the data is telling us. Our direction is then to work out what we can do, as a team of teachers, to help facilitate an improved result in the numeracy of our students across the school.

Student A (Grade 5): I have learnt a heap of new language. Maths was very confusing at times and sometimes I felt like I was in a jail. But when I could see how to do something and why I was doing it I felt like I was in a field of flowers!